

Amendment  
Application No. 10/767,167  
Attorney Docket No. 042054

**AMENDMENTS TO THE DRAWINGS**

The attached sheet of drawings includes changes to Figs. 2 – 9B.

**REMARKS**

Claims 1-11 are pending. The specification, claims and figures are amended.

Claims 3 and 4 were objected to due to use of the phrase "such as." The claims have been amended to overcome the objection.

Claim 2 was objected to due to the phrase "quantum effects in a room temperature environment." The Examiner is requested to reconsider and withdraw the objection.

Claim 2 sets forth that a quantum effect is realized by utilizing ballistic electrons traveling through the vacuum. Applicants do not understand the Examiner's point that electrons are inherently quantum mechanical particles. That is, claim 2 sets forth how the quantum effect is realized. Therefore, it does not appear that amendment of claim 2 is required.

Although not objected to by the Examiner, claim 1 has been amended to delete "or the like."

Figs. 1-9 were objected to because they are designated as --Prior Art--, whereas the specification associates these figures as part of the invention. Replacement Sheets are submitted herewith to correctly label Fig. 1 as Prior Art and remove the incorrect labels from the remaining Figures.

Claims 1, 2 and 7 were rejected under 35 USC §102(b) as being anticipated by IBM Technical disclosure (NB8910242) using Mandelman as a reference. The Examiner comments

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that the IBM Technical disclosure teaches use of a gated field device in an integrated circuit instead of a field effect transistor. This rejection is respectfully traversed.

The present invention employs both a fine vacuum tube element and other electronic elements (i.e., integrated and formed on a substrate of a semiconductor). The fine vacuum tube element and the other electronic elements transmit signals to and from each other. Thus, the present invention differs from the IBM Technical disclosure because the IBM Technical disclosure merely uses the gated field emission devices instead of the field effect transistors. In other words, the IBM Technical disclosure does not teach a combination of a fine vacuum tube and another electronic element integrated and formed on a substrate of a semiconductor as claimed.

Claims 3-6 and 8 were rejected under 35 USC §103(a) as being unpatentable over Peczalski in view of NB 8910242 in further view of Mandelman. In this rejection, the Examiner argues that it would have been obvious to replace the FETs of Peczalski with the FEDs of the IBM Technical disclosure. This rejection is respectfully traversed.

If the references are combined as suggested by the Examiner, the combination does not lead to the claimed invention. That is, the combination would not teach an integrated circuit comprising a fine vacuum tube element and other electronic elements which transmit signals to and from each other.

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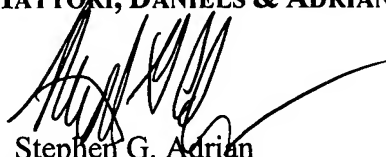
For at least the foregoing reasons, the claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

Should the Examiner deem that any further action by applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone applicants' undersigned attorney.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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Attachment: Replacement Sheet depicting Figs. 2-9B